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REMARKS

Claims 1, 7-12, 14, and 23-32 are pending in this application.

Claims 1, 7-8, 10-12, 14, and 23-26 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Harker (previously cited United States Patent 5,940,557) in view of Aherne et al. (previously cited United States Patent 6,400,736) and further in view of Dawes et al. (United States Patent 6,488,414).

Harker and Aherne are said to disclose the claimed subject matter with the exception of a lensed fiber input end comprising a biconic lens.

The examiner states that Dawes teaches a fiber having a lensed input that may be interpreted as biconic. The examiner further states that the lens of Dawes has a number of origins of first radius and that at least one of these origins would be offset as claimed.

The applicant is somewhat unclear as to the examiner's comments about Dawes et al.

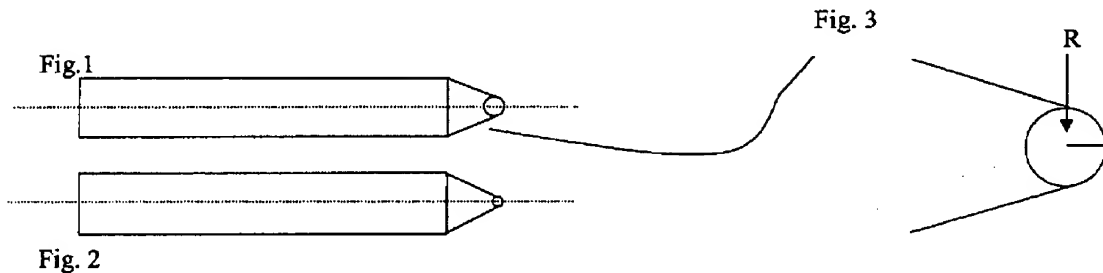
The applicant is of the opinion that Dawes does not disclose a biconic lens 32. In various embodiments of Dawes et al., for example in figures 3 (Col. 4, lines 35-38) and 5 (Col. 5, lines 54-57), spherical lenses are shown, but no biconic lenses are illustrated or described in the specification.

As is disclosed in the applicant's disclosure and recited in amended independent claims 1 and 23, a biconic lens is one that has two different radii of curvature that are substantially different lengths; that is, by way of example in the applicant's specification, a first radius of curvature of 14 μm whereas in the other orthogonal direction a second radius of curvature of 8 μm .

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Nowhere do Dawes et al. disclose such a lens, consisting of a first radius of curvature, and a second radius of curvature, as illustrated below:



A biconic lens is shown in Figs 1 and 2 above. In Fig. 2 the lensed fiber shown in Fig. 1 is rotated 90 degrees about its longitudinal axis from that shown in Fig. 1, i.e. Fig. 1 is a top view and Fig. 2 is a side view. Fig. 3 is an expanded view of the lens tip in Fig. 1. In reality there is no circle (as shown) at the lens tip. This is shown to illustrate that the tip has a radius of curvature and it is different when the fiber is rotated 90 degrees. For example, the radius of curvature is significantly smaller in Fig. 2 than in Fig. 1.

The specification of the instant application teaches "The biconic lens 12 has curvatures that are different in orthogonal directions as depicted in Figs. 1B and 1C. In one orthogonal direction, as shown in Fig. 1B, a first radius of curvature of 14 μm whereas in the other orthogonal direction a second radius of curvature of 8 μm , with a tapered angle Θ_1 of about 50° to 55°."

It is argued that Dawes et al. teach a biconic lens and it is further argued that it is inherent that at least one of the origins will be offset as claimed.

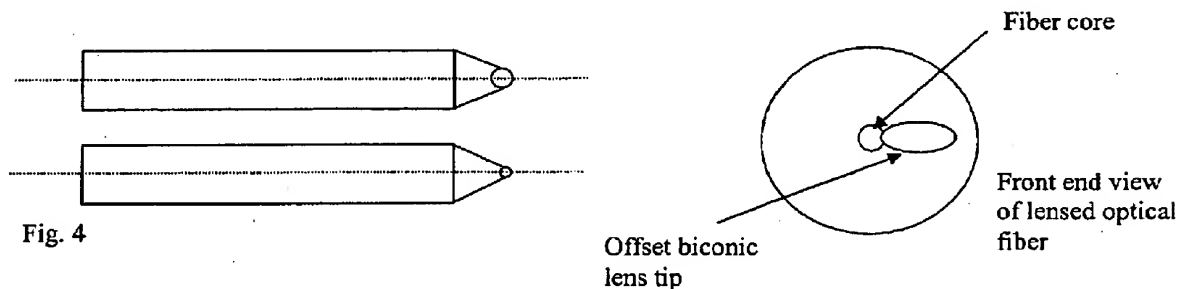
The applicant respectfully disagrees with this statement. Dawes et al. do not teach or suggest a biconic lens consisting of a first and second different radius of curvature, nor would it be inherent that at least one of the origins would be offset as claimed.

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In the figures above, the dashed line shown to go through the center of origin and through the center of the fiber is the same line for both Fig. 1 and 2. Hence in this instance the optical axis of the fiber and the center of origin are in-line and are "not" offset.

Providing a tip of the lens that is offset from the optical axis of the fiber requires, for example, a step of polishing to achieve such an offset. For example, see the Fig. 4 below



Since Dawes does not suggest using a biconic lens, there is certainly no teaching of an offset biconic lens, wherein the center of curvature is offset from the optical axis of the fiber, as claimed.

In summary, a biconic lens has two radii of curvature, which typically would have two centers of curvature that are aligned with the optical axis of the fiber. It is therefore certainly not inherent that they would be otherwise, offset. United States Patent 6,488,414 by Dawes et al. teaches neither a bioconic lens or a special biconic lens with centers of curvature such that they are offset from the optical axis.

In order to expedite allowance of this application, the applicant has amended claims 1 and 23 to more clearly define the biconic lens.

Claims 1 and 23 have been amended to read that the biconic lens has two radii of curvature that are of substantially different lengths. Claim 7 dependent on claim 1 defines the biconic lens being offset. A typographical error on page 11 of the specification has been corrected. These amendments do not add new matter.

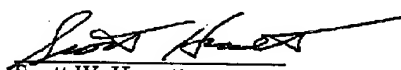
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As such, applicant respectfully submits that the amended claims, in view of the Terminal Disclaimer, are now in condition for allowance. Early and favorable reconsideration would be appreciated.

Should any minor informalities need to be addressed, the Examiner is encouraged to contact the undersigned attorney at the telephone number listed below.

Respectfully submitted,


Scott W. Hewett
Reg. No. 41,836

Scott W. Hewett, Esq.
400 West Third Street, No. 223
Santa Rosa, CA 95401
Tel: (707) 591-0789
Fax: (707) 591-0392

NT/ara